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Medical Force Protection: Cuba

Medical Force Protection countermeasures required before, during, and after deployment to the "area" are as follows:

Major Threats

Diarrhea, dengue fever, respiratory diseases, injuries, sexually transmitted diseases, heat injury, and limited risk of leptospirosis and Brucellosis. The island's water system is not safe for drinking.

Requirements before Deployment

1. **Before Deploying report to Medical to:**
   a. Ensure your Immunizations are up to date, specific immunizations needed for area: **Hepatitis A, Typhoid, Yellow fever, Tetanus (Td), and Influenza.**
   b. If you have not been immunized against Hepatitis A (two dose series over 6 months) get an injection of Immunoglobulin with the initial Hepatitis A dose.
2. **Malaria Chemoprophylaxis: Not required.**
3. **Get HIV testing if not done in the past 12 months.**
4. **Make sure you have or are issued from unit supply: DEET, permethrin, bednets/poles, sunscreen and lip balm. Treat utility uniform and bednet with permethrin.**

Requirements during Deployment

1. Consume food, water, and ice only from US-approved sources; **"Boil it, cook it, peel it, or forget it"**.
2. Involve preventive medicine personnel with troop campsite selection.
3. Practice good personal hygiene, hand-washing, and waste disposal.
4. Avoid sexual contact. If sexually active, use condoms.
5. Use DEET and other personal protective measures against insects and other arthropod-borne diseases. Personal protective measures include but are not limited to proper wear of uniform, use of bed nets, and daily "buddy checks" in tick and mite infested areas.
6. Minimize non-battle injuries by ensuring safety measures are followed. Precautions include hearing and eye protection, enough water consumption, suitable work/rest cycles, acclimatization to environment and stress management.
7. Eliminate food/waste sources that attract pests in living areas.
8. Avoid contact with animals and hazardous plants.

Requirements after Deployment

1. Receive preventive medicine debriefing after deployment.
2. Seek medical care immediately if ill, especially with fever.
3. Get HIV and PPD testing as required by your medical department or Task Force Surgeon.

CUBA
VECTOR RISK ASSESSMENT PROFILE
(VECTRAP)

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1. GEOGRAPHY: **Area** of 110,860 sq. km. (44,200 sq. mi.), about the size of Pennsylvania. ***Capital*** - Havana (pop. 2 million). ***Other cities*** - Santiago de Cuba, Camaguey, Santa Clara, Holguin, Matansas, Cienfuegos,and Pinar del Rio. **Terrain** - flat or gently rolling plains and hills. Mountains up to 2000 meters (6000 ft.) in the southeast. **Climate** - Tropical, moderated by trade winds. Dry season November - April; rainy season May - October.

2. VECTOR-BORNE DISEASES:

a. **Malaria**: Officially considered malaria-free by the World Health Organization. The 250 to 825 cases reported annually since the mid-1980s are tallied as imported or introduced. However, competent mosquito vector species are present, and risk exists for re-establishment of transmission.

b. **Dengue fever**: As of late June 1997, an epidemic of dengue fever, including dengue hemorrhagic fever (DHF)/dengue shock syndrome (DSS) was occurring in Santiago de Cuba province, southeastern Cuba. Cuban health officials reported 826 cases (3 fatal), but unofficial estimates indicated that up to 20,000 cases (at least 30 fatal) had occurred. Most cases reported in and around the provincial capital, about 75 km west of Guantanamo Bay Naval Station. Although intensive mosquito control measures reportedly were underway, they are unlikely to be effective in preventing spread to other areas of Cuba.

Previous major outbreaks occurred in 1977/78 (attributed to dengue virus serotype 1), and 1981 (attributed to dengue 2). During the peak of the 1981 epidemic, more than 11,000 cases were reported daily, and many deaths from dengue hemorrhagic fever (DHF) occurred. Cuban epidemiologists attributed the relatively large number of DHF cases to the closely spaced occurrence of outbreaks caused by dengue 1 and 2. No cases were reported during 1982 to 1996. However, 3,012 cases (205 DHF, 12 fatal) were reported from Santiago de Cuba in 1997.

c. OTHER: **Eastern Equine Encephalitis (EEE)** and **plague** are reported at very low levels of endemicity. The risk of acquiring these diseases is considered low. But if acquired, they would significantly reduce combat effectiveness.

3. DISEASE VECTOR INFORMATION:

a. The only potential vector of malaria in Cuba is the mosquito, *Anopheles albimanus*. *An. albimanus* has been reported resistant to the pesticides DDT and Dieldrin/HCH.

b. Dengue is transmitted by the mosquito, *Aedes aegypti*. This is a peridomestic mosquito that prefers to breed in artificial containers near human habitations. It is diurnally active and feeds indoors or out, often biting around the neck or ankles. It typically rests indoors after feeding. *Ae. aegypti* has been reported resistant to the pesticides DDT and Dieldrin/HCH.

c. EEE is transmitted by *Ae. sollicitans*.

d. The mosquito, *Culex quinquefasciatus* may occur in pestiferous numbers, particularly in urban areas or where highly organic breeding sites are present. This species is a potential vector of filariasis and encephalitis viruses. Malathion was widely used for *C. quinquefasciatus* control in Cuba until 1986 when, because of resistance, it was replaced by Cypermethrin. Cypermethrin resistance was detected in the central area of Havana in 1990.

4. DISEASE AND VECTOR CONTROL PROGRAMS:

a. Prevention and Control: The conscientious use of personal protective measures will help to reduce the risk of many vector-borne diseases. The most important personal protection measures include the use of DEET insect repellent on exposed skin, wearing permethrin-treated uniforms, and wearing these uniforms properly. The use of DEET 33% lotion (2 oz. tubes: NSN 6840-01-284-3982) during daylight and evening/night hours is recommended for protection against a variety of arthropods including mosquitoes, sand flies, other biting flies, fleas, ticks and mites. Uniforms should be treated with 0.5% permethrin aerosol clothing repellent (NSN 6840-01-278-1336), per label instructions. NOTE: This spray is only to be applied to trousers and blouse, not to socks, undergarments or covers. Reducing exposed skin (e.g., rolling shirt sleeves down, buttoning collar of blouse, blousing trousers) will provide fewer opportunities for blood-feeding insects and other arthropods. Additional protection from mosquitoes and other biting flies can be accomplished by the use of screened eating and sleeping quarters, and by limiting the amount of outside activity during the evening/night hours when possible. Bednets (insect bar [netting]: NSN 7210-00-266-9736) may be treated with permethrin for additional protection.

b. Since 1981, the Cuban government has maintained an aggressive *Ae. aegypti* eradication program. This program includes the routine inspection of tens of thousands of larvatraps (sections of tires that contain water). Despite this intense effort, small foci of infestation are periodically found. In addition, collections of *Aedes albopictus* (another container-breeding mosquito and a potential disease vector) were reported in 1996. Although these infestations reportedly eliminated, their presence demonstrates that container-breeding habitats are still common.

c. The most important element of an *Aedes aegypti* control program is SOURCE REDUCTION. Eliminating or covering all water holding containers in areas close to human habitation will greatly reduce *A. aegypti* populations. Alternatively, containers may be emptied of water at least once a week to interrupt mosquito breeding. Sand or mortar can be used to fill tree holes and rock holes near encampments.

d. Expanded vector control recommendations are available by request.

5. IMPORTANT REFERENCES:

Contingency Pest Management Pocket Guide - Fourth Edition. Technical Information Memorandum (TIM) 24. Available from the Defense Pest Management Information Analysis Center (DPMIAC) (DSN: 295-7479 COMM: (301) 295-7479). Best source for information on vector control equipment, supplies, and use in contingency situations.

Control of Communicable Diseases Manual - Sixteenth Edition. 1995. Edited by A. S. Benenson. Available to government agencies through the Government Printing Office. Published by the American Public Health Association. Excellent source of information on communicable diseases.

Medical Environmental Disease Intelligence and Countermeasures - (MEDIC). September 1997. Available on CD-ROM from Armed Forces Medical Intelligence Center, Fort Detrick, Frederick, MD 21702-5004. A comprehensive medical intelligence product that includes portions of the references listed above and a wealth of additional preventive medicine information.

Internet Sites- Additional information regarding the current status of vector-borne diseases in this and other countries may be found by subscribing to various medical information sites on the internet. At the Centers of Disease Control and Prevention home page subscriptions can be made to the Morbidity and Mortality Weekly Report(MMWR)and the Journal of Emerging Infectious Diseases. The address is www.cdc.gov. The World Health Organization Weekly Epidemiology Report (WHO-WER) can be subscribed to at www.who.int/wer. The web site for PROMED is www.promedmail.org:8080/promed/promed.folder.home.
Although PROMED is not peer reviewed, it is timely and contains potentially useful information. The CDC and WHO reports are peer reviewed. Information on venomous arthropods such as scorpions and spiders as well as snakes, fish and other land animals can be found at the International Venom and Toxin Database website at www.uq.edu.au/~ddbfry/. Information on anti-venom sources can also be found at that site. Information on Poisonings, Bites and Envenomization as well as poison control resources can be found at www.invivo.net/bg/poison2.html.